Chief Joseph Dam and Rufus Woods Lake Bank Protection for Buckley Bar Project, Douglas County, Washington

FINAL SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT

July 2005

US Army Corps of Engineers®
Seattle District

Chief Joseph Dam and Rufus Woods Lake Bank Protection for Buckley Bar Project
Final Supplemental Environmental Assessment and Finding of No Significant Impact

July 2005

Responsible Agencies: The responsible agency for this project is the Seattle District, U.S. Army Corps of Engineers.

Summary:
The Chief Joseph Dam (CJD) project is situated on the Columbia River in north-central Washington State about a mile upstream of the town of Bridgeport. The dam is located about 545 river miles (RM) upstream of the mouth of the river. Buckley Bar is an island in Rufus Woods Lake (CJD reservoir) at RM 587, about 42 miles upstream of CJD and 9 miles downstream from Grand Coulee Dam, which is operated by the Bureau of Reclamation.

A Native American cemetery site (Archaeological site 45-DO-285) is located on Buckley Bar. Site 45-DO-285 was first recorded in 1976. Archaeological test excavations in 1977 showed that the site was a contributing member of the Rufus Woods Lake Archaeological District, which was determined eligible for the National Register of Historic Places in 1978. In 1981, the pool of CJD was raised 10 feet. After the pool raise in 1981, erosion occurred at the site, exposing cultural materials, including human remains, and damaging the wildlife habitat. In 1996, the sandy silt banks had eroded so much that they were nearly vertical. That year, a repair was undertaken to correct the mass wasting by constructing a spall rock revetment on Buckley Bar. This repair is still intact, however, there is an approximately 60 foot segment where some settling has occurred. This stretch is along an overflow channel that crosses the cultural site. If the settling continues and the back slope is not protected, there will be a low point on the bank that could be overtopped during high flows. The flows could then scour the bar, potentially damaging cultural remains.

In 1996, the United States (U.S.) Army Corps of Engineers (Corps) completed an Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) under the National Environmental Policy Act (NEPA) for providing bank protection at the Indian cemetery site on Buckley Bar, an island in Rufus Woods Lake, the reservoir behind CJD on the Columbia River in Washington. This EA is prepared as a supplement to document a small addition to this project.

The Corps proposes to add filter fabric and spall rock to the landward side of the bank at the overflow channel. Filter fabric and spall rock will be placed on the back slope of the bank in order to prevent flows from scouring out material. The rock will reinforce the narrow bank protection currently in place, and dissipate flows when overtopping does occur. The filter fabric and rock will be placed on a 60 linear foot by 20 foot section of the bank.

The official comment period for the Draft Supplemental EA was May 27, 2005 to June 27, 2005.

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1.0 INTRODUCTION

In 1996, an Environmental Assessment (EA) and a Finding of No Significant Impact (FONSI) (Corps, 1996a) were written by the U.S. Army Corps of Engineers, Seattle District (Corps) for providing bank protection at the Indian cemetery site at Buckley Bar, an island in Rufus Woods Lake, the reservoir behind CJD on the Columbia River in Washington. This supplement is being prepared pursuant to the National Environmental Policy Act (NEPA) Sec. 102(2)(c), to address a small addition to this project.

This document is intended to meet procedural and documentation requirements of NEPA, the Council on Environmental Quality (CEQ) rules (40 CFR 1500-1508), and US Army Corps of Engineers implementing regulations (ER 200-2-2).

The previous bank protection project and its construction are described in the 1996 EA; some effects of that work are discussed in this document where appropriate.

2.0 BACKGROUND

The CJD project is situated on the Columbia River in north-central Washington State about a mile upstream of the town of Bridgeport. The dam is located about 545 river miles (RM) upstream of the mouth of the river. Buckley Bar is an island in Rufus Woods Lake (CJD reservoir) at RM 587, about 42 miles upstream of CJD and 9 miles downstream from Grand Coulee Dam, which is operated by the Bureau of Reclamation.

Prior to construction of the CJD, Buckley Bar was only a sand bar, and only became an island during very high flows. When CJD was constructed in 1955, the bar became a permanent island, separated from the bank by a shallow side channel. Then, in 1981, the pool of CJD was raised 10 feet. This further cut the island off from the riverbank, deepened the side channel, and inundated new areas of the island. The bar contains a large cultural resources site (45-DO-285), a wildlife mitigation site, and provides goose nesting and deer fawning habitat.

After the pool raise in 1981, erosion occurred at the site, exposing cultural materials, including human remains, and damaging the wildlife habitat. Portions of Buckley Bar are composed of sandy silt with trace gravels, while the remainder of the bar appears to be mostly granitic cobbles. The archeological site lies within the fine sandy silt sediments. In 1996, the sandy silt banks had eroded so much that they were nearly vertical. That year, a repair was undertaken to correct the mass wasting by constructing a spall rock revetment on the bar. This repair is still intact however; there is an approximately 60 foot segment where some settling has occurred. This stretch is along an overflow channel that crosses the cultural site. If the settling continues and the back slope is not protected, there will be a low point on the bank that could be overtopped during high flows. The flows could then scour the bar, potentially damaging cultural remains.

3.0 PURPOSE AND NEED

The purpose of the proposed project is to provide bank protection for the Native American cemetery site on the CJD Project, Douglas County, Washington, as soon as possible to prevent degradation of the cultural resources located at the site. This site is a contributing element of the Rufus Woods Lake Archaeological District, a National Register of Historic Places (NRHP) eligible archaeological site that contains the human remains of the Colville Confederated Tribes (CCT) ancestors.

4.0 PROJECT AREA DESCRIPTION

The CJD Project is situated on the Columbia River in north-central Washington State about a mile upstream of the town of Bridgeport. The dam is located about 545 river miles (R.M.) upstream of the mouth of the river. Buckley Bar is an island in Rufus Woods Lake at R.M. 587 (Figure 1), about 42 miles upstream from CJD and 9 miles downstream from Grand Coulee Dam, which is operated by the Bureau of Reclamation.

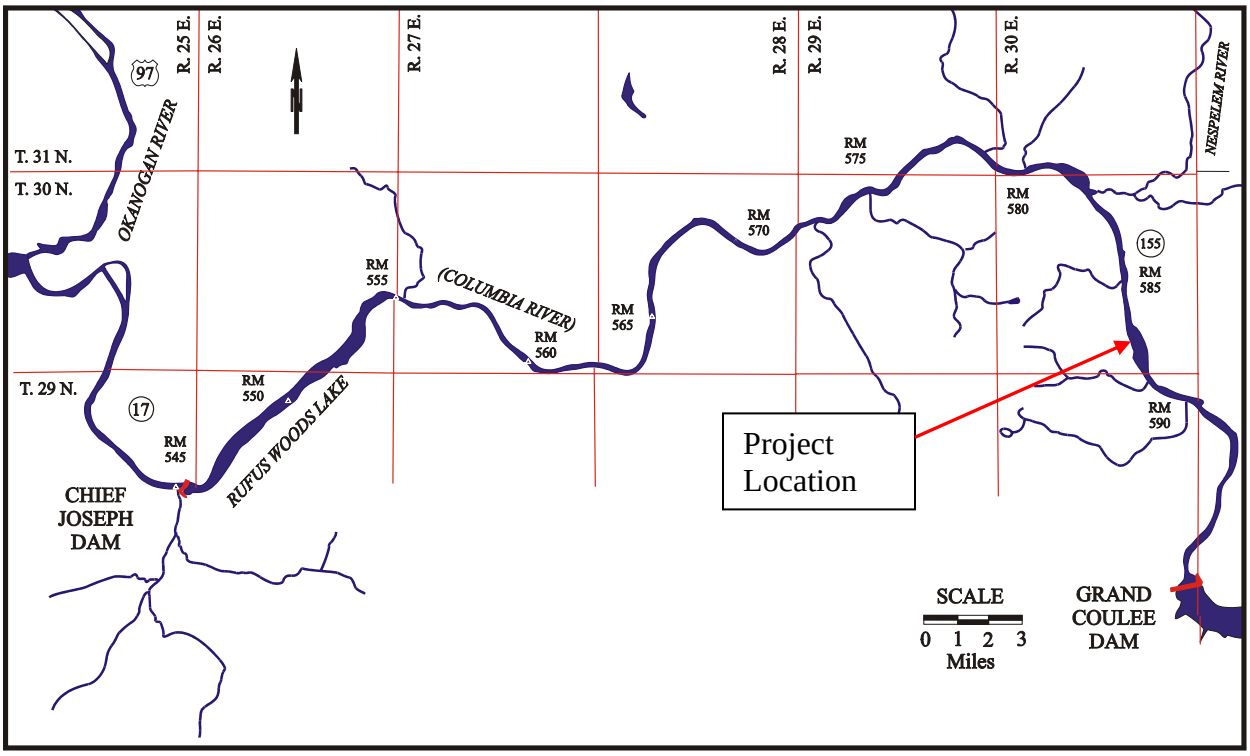

Figure 1. Project Area

5.0 PROJECT ALTERNATIVES

Multiple alternatives were considered including the No-Action Alternative, the relocation Alternative, and the spalls buttress alternative. In order for any alternative to be acceptable for consideration it must meet certain objectives. The alternative must afford significant protection to the site, it must be environmentally acceptable, it must not damage any cultural resources, and it should minimize costs to the Federal government

5.1. No Action

NEPA requires each EA include an analysis of the "no-action" alternative, against which the effects of "action" alternative(s) can be compared and evaluated. Under the no-action alternative, site protection actions would not occur.

The no-action alternative does not meet the project purpose and need. Under the no action alternative, erosion of the site would continue. With continued high flows, the cultural resources site would eventually be damaged or destroyed. This alternative was not considered in greater detail since loss of the site was not considered acceptable.

5.2. The Relocation Alternative

The relocation alternative would excavate the cultural materials on the site and relocate or place them in curation. In addition, the relocation alternative would require the in-kind replacement of the wildlife mitigation site. This alternative was not selected because the costs were deemed too high compared to the costs for other alternatives. In addition the Colville Confederated Tribes (CCT) preference is to maintain the graves of their ancestors in the current location.

5.3. Preferred Alternative

The preferred alternative is to place filter fabric and rock spalls to buttress the settling bank. Filter fabric will be placed over the existing ground on the backside of the bank, and then covered with a one foot blanket of quarry spalls. Construction will not disturb native soils, but will pull back some rock from the 1996 revetment. Materials will be obtained from a local borrow pit trucked to a boat launch and loaded from the boat launch onto the work boat with a front end loader. Materials will then be delivered to the site with a workboat, offloaded by hand, and placed by hand. The filter fabric and rock will be placed on a 60 linear foot by 20 foot section of the bank (Figure 2). The proposed project is scheduled to be constructed July 25, 2005 through July 29, 2005.

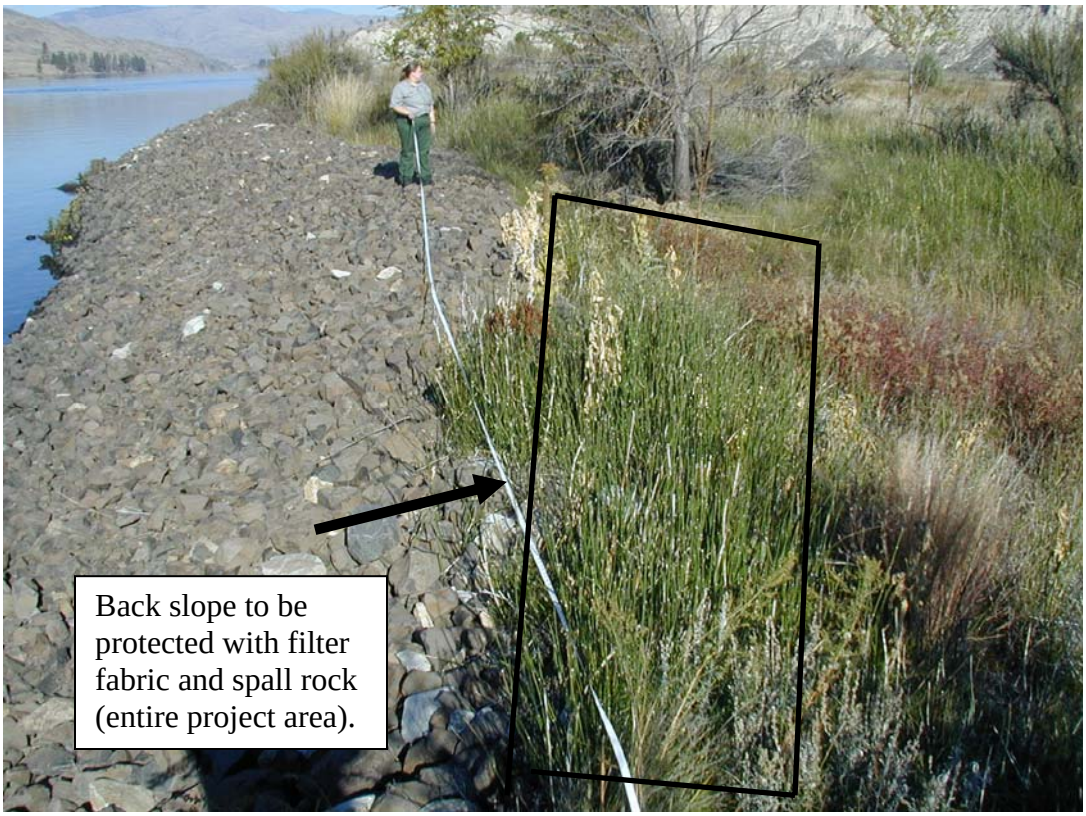

Figure 2. 60 ft. by 20ft. Project Site.

6.0 AFFECTED ENVIRONMENT

The project area is composed of the previously described sites on the left bank of the Columbia River in Douglas County, within the boundaries of the Colville Reservation

6.1. Physical and Geologic Environment

This site is comprised of a sequence of unconsolidated fine sands and silts overlaying intermixed coarser-grained alluvial fan gravels and Columbia River gravels.

6.2. Water Quality

The Washington Department of Ecology (Ecology) and the Colville Confederated Tribes (CCT) determine water quality criteria for the Columbia River at CJD. In general, the water quality in the Columbia River above and below the project is good with periodic exceedances of Ecology and CCT criteria occurring for temperature and total dissolved gas (Corps 2004). Based on these periodic violations, Ecology placed the Columbia River above and below CJD in 2002/2004 Category 5 (polluted waters that require a TMDL) TMDL list for temperature and TDG.

Ecology has classified the Columbia River above and below CJD as a salmon and trout spawning non-core rearing and migration aquatic life use water body, while the CCT has classified the Columbia River as a Class I water body above CJD and a Class II water body below the dam. Water quality standards for TDG and temperature for CJD are presented in Table 1. At CJD, the State of Washington and the CCT have a similar TDG maximum standard of 110%. However, Washington allows exceedance of the 110% TDG criterion to facilitate fish passage spills as shown in Table 1. For example, CJD was granted a TDG water quality criteria waiver by Ecology for the 2003 spill season for the purpose of managing system spill for improved fish conditions. In addition, the TDG criterion established by Washington State and the Colville Tribe does not apply to flows above the seven-day, ten-year frequency (7Q10) flood flow of 222 kcfs.

Table 1. Washington Department of Ecology (Ecology) and Colville Confederated Tribes (CCT) water quality standards for Total Dissolved Gas and Temperature.

Parameter/Project	Regulator	Standard
Total Dissolved Gas		
Chief Joseph Dam	Ecology	Shall not exceed 110% of saturation at any point of sample collection, except during spill season for fish passage in which total dissolved gas shall be measured as follows: (1) Must not exceed an average of 115% as measured in the forebay of the next downstream dam. (2) Must not exceed an average of 120% as measured in the tailrace of each dam; TDG is measured as an average of the 12 highest consecutive hourly readings in any one day, relative to atmospheric pressure. (3) A maximum TDG one-hour average of 125% as measured in the tailrace must not be exceeded during spillage for fish passage.
	CCT	Shall not exceed 110% of saturation at any point of sample collection.
Temperature		
Chief Joseph Dam	Ecology	Measured by the 7-day average of the daily maximum temperatures. Shall not exceed 17.5°C. When temperature exceeds the criteria or is within 0.3°C of the criteria, and the condition is due to natural conditions, then human actions may not cause an increase of more than 0.3°C.
	CCT	Class I: Shall not exceed 16.0°C due to human activities. When natural conditions exceed 16.0°C, no temperature increase will be allowed which will raise the receiving water by greater than 0.3°C. Class II: Shall not exceed 18.0°C due to human activities. When natural conditions exceed 16.0°C, no temperature increase will be allowed which will raise the receiving water by greater than 0.3°C.

6.3. Vegetation

Vegetation on Buckley Bar is typical of that found on sites in shrub steppe communities. The most extensive is the big sagebrush and bluebunch wheatgrass community; these are the dominant species. Also of major importance are the threetip sagebrush, bitter brush, bent grass, Idaho fescue, and Western juniper.

In the immediate project area the vegetation consists of some grasses and some non-native weeds such as the Common Mullein (*Verbascum thepsus*).

6.4. Fish and Wildlife

Wildlife species typical of shrub steppe communities inhabit the three sites and surrounding area. Coyote (*Canis latrans*), mule deer (*Odocoileus hemionus*), racoon (*Procyon lotor*), yellow pine chipmunk (*Eutamias amoenus*), deer mouse (*Peromyscus maniculatus*), and great basin pocket mouse (*Perognathus parvis*) have all been observed in the vicinity of the site. Migratory and wintering waterfowl present on the Rufus Woods Lake include eared grebe (*Podiceps nigricollis*), horned grebe (*Podiceps auritus*), western grebe (*Aechmophorus occidentalis*), mallard (*Anas platyrhynchos*), American wigeon (*Anas americana*), redhead (*Aythya americana*), northern pintail (*Anas acuta*), canvasback. (*Aythya valisineria*), scaup species (*Aythya sp*.), bufflehead (*Bucephala albeola*), goldeneye species (*Bucephala sp*.), ruddy duck (*Oxyura jamaicensis*), and American coot (*Fulica americana*). Great blue heron (*Ardea herodias*), Canada goose (*Branta canadensis*), and common merganser (*Mergus merganser*) are found here in summer also. Western kingbird (*Tyranus verticalis*), eastern kindbird (*Tyranus tyrannus*), chipping sparrow (*Spizella passerina*), northern oriole (*Icterus galbula*), and western meadowlark (*Sturnella neglecta*) are passerines found in summer. Chukar (*Alectoris chukar*), red-shafted flicker (*Colaptes auratus*), black-billed magpie (*Pica pica*), American robin (*Turdus migratorius*) and Townsend's solitaire (*Myadestes townsendi*) are found in fall (Corps 1976). Kokanee (*Oncorhynchus nerka*) are found in Rufus Woods Lake but do not spawn in the area adjacent to the site (Sears 2005). Other fish found in the pool include mountain whitefish (*Prosopium williamsoni*), rainbow trout (*Oncorhynchus mykiss*), brown trout (*Salmo trutta*), yellow perch (*Perca flavescens*), walleye (*Stizostedion vitreum*), white sturgeon (*Acipenser transmontanus*), burbot (*Lota lota*), northern squawfish (*Ptychocheilus oregonensis*), peamouth *Mylocheilus caurinus*), chiselmouth (*Acrocheilus alutaceus*), carp (*Cyprinus carpio*), and several species of suckers (*Catastomus spp.*).

6.5. Threatened and Endangered Species

Bald eagles (*Haliaeetus leucocephalus*) frequent the project area throughout the year, and form wintering concentrations. One bald eagle nest is located ¾ mile downstream of the construction site. Work will commence after the wintering concentrations of eagles have begun. Construction will not disrupt that nesting area. A preliminary determination indicates that the activity will not affect endangered or threatened species, or their critical habitat, designated under the Endangered Species Act of 1973. Formal consultation under Section 7 of the Act is not required.

6.6. Wetlands

The project area does not contain wetlands as defined by the Corps of Engineers, and all work will be conducted above ordinary high water.

6.7. Noise/Air Quality

No known air quality or noise problems exist in the area, and it is an attainment zone.

6.8. Hazardous and Toxic Materials

A review of the EPA databases using SITEINFO indicates that no recorded hazardous waste sites are adjacent to the three sites. Visual inspection and monitoring of the sites by Seattle District personnel has not identified any releases onsite of hazardous or toxic materials.

6.9. Recreation and Other Public Use

The project area is located on a private land holding and any recreational use of this land should be coordinated with the land owner.

6.10. Tribal Rights

The work is located near Nesplem within the Confederated Tribes of the Colville Reservation. The Colville Reservation was established in 1872. It consists of 2.9 million acres between the Columbia and Okanogan Rivers, bounded on the north by the Canadian border. In 1891 the **Colville** Indians entered into an "Agreement" with the United States, in which the Tribes ceded to the government roughly 1.5 million acres (collectively, "the North Half"), but reserved the right to hunt and fish on the ceded land. The Agreement states that " 'the right to hunt and fish in common with all other persons on lands not allotted to said Indians shall not be taken away or in anywise abridged.'" Antoine v. Washington, 420 U.S. 194, 196 n.4, 43 L. Ed. 2d 129, 95 S. Ct. 944 (1975)." Okanogan Highlands Alliance v. Williams, 236 F.3d 468, 478 (9th Cir. 2000)

Furthermore, it has been held that:

"'Federal agencies owe a fiduciary responsibility to Native American tribes. Morongo Band, 161 F.3d at 574; see also Klamath Water Users Protective Ass'n v. Patterson, 204 F.3d 1206, 1213 (9th Cir. 2000) (stating that "the United States, as a trustee for the Tribes, has a responsibility to protect their rights and resources"). In the absence of a specific duty, this responsibility is discharged by "the agency's compliance with general regulations and statutes not specifically aimed at protecting Indian tribes.' Morongo Band, 161 F.3d at 574." Okanogan Highlands Alliance v. Williams, 236 F.3d 468, 479 (9th Cir. 2000).

6.11. Cultural Resources

A Native American cemetery site is located on the island. Repairing the existing bank protection is critical to keeping this site intact and to prevent erosion. The cemetery, Site 45-DO-285, could be adversely impacted if the bank protection is not reinforced. This site is significant to the Colville Confederated Tribes. Their ancestors are buried at this location. The site is also a contributing element to the Rufus Woods Lake Archaeological District, determined eligible for the National Register of Historic Places (NRHP) in 1978. The objective is to prevent erosion on the upstream, unarmored side of 45-DO-285. This would be accomplished by placing a small amount of armor on the back side of a plug that blocks a swale running along the south (upstream) side of the site; the armor atop the plug also would be slightly increased in height. There is a danger that extreme high water overflowing the plug could scour out the unprotected sediments on the back side, destroying the plug and leading to channel capture and beginning of

scour on 45-DO-285's unprotected side. Prevention of such a washout also would indirectly prevent damage to another site at the other end of the swale, 45-DO-284. Of the numerous sites that are contributing elements to the Rufus Woods Lake Archaeological District, seven are located on Buckley Bar. In addition to 45-DO-285, these sites include: 45-DO-257, 45-DO-284, 45-DO-600, 45-DO-601, 45-DO-626, and 45-DO-628. None of these sites exist within the Area of Potential Effects (APE) for the proposed project.

7.0 ENVIRONMENTAL EFFECTS OF THE PROPOSED ACTION

The effects of the proposed actions are compared against the baseline conditions associated with the no-action alternative. Unless otherwise indicated in the following discussion of environmental effects, the no-action alternative will not affect climate and air quality, physical and geologic environment, water quality, sediment, biological resources, cultural resources, or recreational and public use at the project site.

7.1. Physical and Geologic Environment

7.1.1. Proposed Alternative

The proposed bank protection project will result in a 20 foot by 60 foot area of the back slope being covered with a 1 foot layer of spalls. To accomplish this 60 cubic yards (90 tons) of rock will be required. Material for construction will be obtained from an established local borrow pit and quarry.

7.1.2. No-Action Alternative

No effects are anticipated as a result of the No-Action alternative.

7.2. Water Quality

7.2.1. Proposed Alternative

No significant discharges into Rufus Woods Lake are expected to occur due to the proposed project. The rock placement will occur on the back slope of the bank therefore no in-water work will occur. Rock placement will be done by hand labor, and no machinery will be working on the bar. The only potential impact to water quality that could occur would be the result of prop-wash stirring up sediment and increasing turbidity as the work boat delivers the rock to Buckley Bar. Based on past observation of boat landings in the area this will not occur, and in the unlikely event that it does occur, it will be extremely localized and temporary. In addition, no effects to dissolved gas will occur as a result of this project.

7.2.2. No-Action Alternative

No effects are anticipated as a result of the No-Action alternative.

7.3. Vegetation

7.3.1. Proposed Alternative

Neither candidate nor sensitive plant species grow within the boundaries of the proposed project sites (Visalli 1997). Vegetation disturbance will be minimal as the project size is very small. The vegetation that will be impacted consists of grasses and non-native weeds, no trees or shrubs are present in the project area. No trees or shrubs will be removed during construction. Construction disturbance of existing vegetation would be minimized to the extent practicable. No large equipment will used on the bar as bank protection material will be placed by hand. Significant damage to vegetative areas is not expected.

7.3.2. No-Action Alternative

No effects are anticipated as a result of the No-Action alternative.

7.4. Fish and Wildlife

7.4.1. Proposed Alternative

Due to the construction timing (July 25, 2005- July 30, 2005) of the proposed project and the lack of significant bank vegetation, no significant impacts to wildlife are expected. The location is commonly used by Canadian Geese for nesting but all offspring will be fledged by late July when the proposed project is scheduled for construction (Shapiro 1987). In addition all deer that use the island for reproduction will have fawned by late July. No in-water work will be conducted and no riparian vegetation will be impacted, therefore no impacts to fish resources are expected to occur.

7.4.2. No-Action Alternative

No effects are anticipated as a result of the No-Action alternative.

7.5. Threatened and Endangered Species

7.5.1. Proposed Alternative

Construction will not affect bald eagle activity on Rufus Woods Lake as no trees would be removed, the area is not regularly used by bald eagles, and the closest nest is over ¾ mile away and is not in line of site. Construction will not affect Upper Columbia Chinook salmon or Upper Columbia Steelhead as they do not use the habitat above CJD. Construction will not affect Bull trout that inhabit Lake Rufus Woods as no in-water work will be conducted, all construction will occur on the back slope of the bank, no significant vegetation will be impacted, and in the unlikely event that the work boat causes fine sediment to be suspended, it will be highly localized and temporary.

7.5.2. No-Action Alternative

No effects are anticipated as a result of the No-Action alternative.

7.6. Wetlands

7.6.1. Proposed Alternative

No wetlands will be impacted from the proposed project and all bank protection material will be placed on the back slope away from the river.

7.6.2. No-Action Alternative

No effects are anticipated as a result of the No-Action alternative.

7.7. Noise/Air Quality

7.7.1. Proposed Alternative

The significance of impacts to air quality is based on federal, state, and local pollution regulations or standards. Air quality impacts from a proposed activity or action would be significant if they:

- increase ambient air pollution concentrations above any National Ambient Air Quality Standards (NAAQS);
- contribute to an existing violation of any NAAQS;
- interfere with or delay timely attainment of NAAQS; or
- impair visibility within any federally mandated Class I area.

The area is in attainment or is unclassified for all air pollutants. According to the U.S. Environmental Protection Agency's General Conformity Rule in Section 40, CFR Chapter 51 (§40 CFR 51), Subpart W, any proposed federal action that has the potential to cause violations, as described above, in a nonattainment or maintenance area must undergo a conformity analysis. Since CJD is not located within a non-attainment or maintenance area, a conformity applicability analysis is not required for the proposed action.

During construction dump trucks will be used to move material from the quarry to the staging site at the boat launch. A front-end loader will be used to place the material from the staging area onto the work boat, and the work boat will transport the material approximately 1 mile downstream where it will be placed by hand at the project site. All this equipment would temporarily increase emissions and noise levels. Increased concentrations of fossil fuels and particulates are expected. However, with the good air quality that currently exists, rapid dispersion is expected with no long-term adverse impact.

7.7.2. No-Action Alternative

No effects are anticipated as a result of the No-Action alternative.

7.8. Hazardous and Toxic Materials

7.8.1. Proposed Alternative

No releases of hazardous or toxic materials are anticipated due to the proposed action. The construction manager will follow prescribed fill prevention measures to keep petroleum products and other chemicals from entering Rufus Woods Lake. No disturbance of existing hazardous or toxic wastes sites would occur due to this project.

7.8.2. No-Action Alternative

No effects are anticipated as a result of the No-Action alternative.

7.9. Recreation and Other Public Use

7.9.1. Proposed Alternative

Recreation use and access will not be impacted by this action.

7.9.2. No-Action Alternative

No effects are anticipated as a result of the No-Action alternative.

7.10. Tribal Rights

7.10.1. Proposed Alternative

The proposed project has been analyzes with respect to its effects on trust responsibilities described above. The work is in compliance with general regulations and statutes and will not violate any responsibility owed by the United States to the Colville Confederated Tribes.

7.10.2. No-Action Alternative

No effects are anticipated as a result of the No-Action alternative.

7.11. Cultural Resources

7.11.1. Proposed Alternative

The purpose of the proposed project is to protect a historic property and cemetery (45-DO-285) on Buckley Bar. Although offloading and placment of materials by hand would result in no earth disturbance, the Corps determined that if historic properties existed within the APE they could be adversely affected by the project. Historic properties exist in the immediate vicinity of the project area, however, none exist within the project's APE. Accordingly, the Corps determined the project would result in No Historic Properties Affected and consulted with the CCT (affected tribe) and Washington Office of Archaeology and Historic Preservation (OAHP) in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended. The Corps anticipates OAHP will concur with this determination prior to the final EA. Construction will not occur until this concurrence is received.

7.11.2. No-Action Alternative

Under the no-action alternative, site protection actions would not occur. The no-action alternative does not meet the project purpose and need. Under the no action alternative, erosion of the site would continue. With continued high flows, the cultural resources site would eventually be damaged or destroyed.

7.12. Farmland Protection Policy Act (7 U.S.C. 4201, et seq.)

7.12.1. Proposed Alternative

The Farmland Protection Policy Act (Public Law 97-98, Sec. 1539-1549) requires identification of proposed actions that would affect any lands classified as prime and unique farmlands. The project will not affect farmland classified as prime and unique. This project is consistent with this act.

7.12.2. No-Action Alternative

No effects are anticipated as a result of the No-Action alternative.

8.0 CUMULATIVE IMPACTS

The present shoreline of Rufus Woods Lake was created by the building of CJD and the additional pool raise in 1981 to 956.0 feet. The shoreline is largely unaltered being shaped by wave action and overland erosion. The total area of project constructed in 1996 was aprroximately 36,000 square feet. The total area of the proposed project is 1,200 square feet. This amount of bank protection does not represent a significant cumulative impact on Rufus Woods Lake.

9.0 COORDINATION

The following agencies and entities have been involved with the environmental coordination of this project:

- Colville Confederated Tribe
- Washington State Office of Archaeology and Historic Preservation
- NOAA Fisheries
- USFWS
- WDFW

Coordination with the above listed agencies and tribes ranged from phone conversations, e-mail, to site visits and face to face meetings. Topics discussed during this coordination include project design, project construction timing, effects to listed species, and other environmental concerns.

10.0 ENVIRONMENTAL COMPLIANCE

LAWS AND REGULATIONS RELATING TO THE PROPOSED ALTERNATIVES	ISSUES ADDRESSED	CONSISTENCY OF PREFERRED ALTERNATIVE
National Environmental Policy Act (NEPA) 42 U.S.C. 4321 et seq.	Requires all federal agencies to consider the environmental effects of their actions and to seek to minimize negative impacts.	Consistent per Draft FONSI and EA document.
Clean Water Act (CWA) 33 U.S.C. 1251 et seq.; Section 404	Requires federal agencies to protect waters of the United States. Disallows the placement of dredged or fill material into waters (and excavation) unless it can be demonstrated that it is the least environmentally damaging practicable alternative.	Not Applicable
Clean Water Act Section 401	Requires federal agencies to comply with state water quality standards.	Not Applicable.
Clean Water Act Section 402	Requires federal agencies to comply with state water quality standards	Not Applicable.
Clean Air Act, 42 USC 7401 et seq.	Requires states to develop plans, called State implementation plans (SIP), for eliminating or reducing the severity and number of violations of National Ambient Air Quality Standards (NAAQS) while achieving expeditious attainment of the NAAQS. The Act also requires Federal actions to conform to the appropriate SIP.	Consistent -The area is in attainment or is unclassified for all pollutants. The contractor will be required to obtain and comply with all applicable permits.
Endangered Species Act 16 U.S.C. 1531 et seq.;	Requires federal agencies to protect listed species and consult with US Fish & Wildlife or NOAA Fisheries regarding the proposed action.	Consistent – ESA documentation/coordination will be completed prior to project construction.
National Historic Preservation Act 16 U.S.C. 461;	Requires federal agencies to identify and protect cultural and historic resources.	Consistent upon determination of No Effect by the State Historic Preservation Officer and the Colville Tribal Historic Preservation Officer. Concurrence may be presumed if there is no response within 30 days of the request for concurrence.
Coastal Zone Management Act (CZMA), 16 USC 1451 et seq.	Compliance with CZMA for protection of the coastal zone; may need certification by state.	Not applicable. Douglas and Okanogan Counties are not coastal counties.

11.0 CONCLUSION

Based on the above analysis, the bank protection project is not a major Federal action significantly affecting the quality of the human environment, and therefore does not require preparation of an environmental impact statement.

12.0 REFERENCES

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Appendix A.

ENVIRONMENTAL ASSESSMENT
BUCKLEY BAR BANK PROTECTION
CHIEF JOSEPH DAM PROJECT
DOUGLAS COUNTY, WASHINGTON

CENPS-EN-PL-ER March 22, 1996

ENVIRONMENTAL ASSESSMENT
BUCKLEY BAR BANK PROTECTION
CHIEF JOSEPH DAM PROJECT
DOUGLAS COUNTY, WASHINGTON

1. PURPOSE AND NEED.

The purpose of the proposed project is to provide bank protection at Buckley Bar, Chief Joseph Dam Project, Douglas County, Washington, as soon as possible to prevent further degradation of the Native American cemetery located at the site.

2. INTRODUCTION.

Due to recent releases from Grand Coulee Dam starting in mid-February and related to flood control, erosion at Buckley Bar has accelerated. The island contains many prehistoric Indian graves. With the accelerated erosion, the site is in imminent danger of being entirely destroyed. Some artifacts have already been lost as a result of the erosion. Portions of Buckley Bar are composed of sandy silt with trace gravels, while the remainder of the bar appears to be mostly granitic cobbles. Along the west side of the bar, the banks are 1 to 2 feet high with numerous exposed roots. Each day as the river water level fluctuates in response to varying discharges from Grand Coulee, the water infiltrates the bank silt and erosion by caving claims the bank. In addition, during recent cold weather, the freezing and thawing of the saturated silts accelerated the erosion. The river currents , which average 1.5 to 3 feet per second, are not actively cutting the bank but do contribute to eroding the silt that supports the existing vegetation along the low bank segments. Approximately 300 feet of the high, sandy silt bank along the northern side of Buckley Bar is undergoing severe erosion through a combination of calving of the saturated silt, and wind and boat generated waves. Erosion of the low bank areas is less severe but also threatens the archaeological site. Approximately 1,200 feet of both high and low banks are in need of immediate protection.

3. PROJECT DESCRIPTION.

a. Location The Chief Joseph Dam Project is situated on the Columbia River in north-central Washington State about a mile upstream of the town of Bridgeport (Figure 1). The dam is located about 545 river miles (R.M.) upstream of the mouth of the river. Buckley Bar is an island in Rufus Woods Lake at RM 587 in Douglas County, Washington (S 35, T 30N R 30E), about 42 miles upstream from Chief Joseph Dam and 9 miles downstream from Grand Coulee Dam, which is operated by the Bureau of Reclamation.

b. Proposed action The goal of the bank protection would be to protect the Native American cemetery. The Corps has determined that loose rock also would be sufficient to stabilize the banks at the site and could be placed entirely from the water using barges, a tug, and a barge-mounted crane with a bucket. No bank contouring would be done. Rock would be trucked from existing commercial sources to a loading site at the R.M. 590 (Seaton's Grove) boat launch ramp and barged to the site. In order to speed production, two barges would be used to transport the rock. While one is unloading at the site, the other can be loading at the launch ramp with a front-end loader. Barges would anchor near shore using spuds, and rock would be offloaded by a barge-mounted crane onto the bank to be protected. The tug would move the crane barge and rock barges, as needed. Work would take place at the high bank first and then on the low banks. About 50 rock-barge trips would be needed to complete the project.

The rock bank protection could accommodate later additions that may be needed if a 4-foot pool raise is implemented in the future. The protection was designed to resist mass wasting of saturated sandy silt, as well as to resist wave attack and eluviation of footing sediment. No heavy construction equipment would be operated on the bar to minimize construction impact on cultural and natural resources. There would be little or no disturbance of large bitterbrush that afford wildlife cover and nesting habitat. The dead pine tree near the point would be retained to provide future habitat for bald eagles. Before any construction takes place, an archaeological team would inspect the beach and remove any eroded cultural material or human remains that would be destroyed by the construction.

To protect the high bank, the construction would place riprap from the top of elevation +6 feet, local datum, to just below the toe of the existing bank, elevation -1 foot, local datum (Figure 2). A 1-foot thick filter layer of rock spalls would be placed as foundation for the riprap to prevent the fine-grained bank material from being carried through the riprap by wave action and to provide a stable bed for the riprap. The riprap would range in size from 600 to 20 pounds (24-inch to 8-inch diameter) and be placed at a 2:1 slope (2 horizontal on 1 vertical) in a layer 2.5 feet thick.

Low bank protection would include approximately 900 feet of rock spall blanket placed over the bank. The rock blanket would have a 5-foot top width and slope at a 3:1 until the slope catches on the existing ground. The rock spalls would range in size from 1-to 12-inch. The top elevation would be at +3 to +4 feet, local datum, and the toe would be at -3 feet, local datum.

Quantities of materials are summarized as follows:

Materials	**Quantity (Cubic Yards)**
Graded Riprap (Granodiorite)	500
Rock Spalls (Basalt)	
Low Bank	1500
High Bank	1000
Subtotal	2500
Total All Materials	**3000**

c. Alternatives. Alternatives to the proposed action are:

1) No Action. Under the no action alternative, erosion of the site would continue, with further losses to the Native American cemetery occurring. With continued high flows, the site would eventually be eliminated. This alternative was not considered in greater detail since loss of the site was not considered acceptable.

2) Reno Mattresses and Spalls. The Confederated Tribes of the Colville Reservation (CCT) has recommended placement of Reno mattresses and gabions at the high bank, with Reno mattresses alone on the low bank. The wire baskets would be filled with filter gravels or basalt near a spalls source on the Colville Indian Reservation on a bench about 500 feet above the Bar and 1/2 mile away on the east side of the river. A helicopter would then move the filled baskets to the Bar and place them on a prepared foundation consisting of filter fabric and rock spalls. Gabions at the high bank would be tilted back

toward the bank and the gap between the gabions and top of bank would be filled with filter rock. Some bank contouring might be required and would be done by hand using work gangs, monitored by an archaeologist acceptable to the Corps and the CCT. If contouring encountered graves, work would be halted at that location immediately and a decision whether to relocate the graves or to leave them in place and cease contouring would be made by the Corps and the CCT. A few bitterbrush might be displaced during contouring. The CCT design was slightly modified to improve constructability by deleting the gabion baskets (with their required foundation preparation). All bank protection would be provided by reno mattresses placed over rock spalls. Construction would require a 3- to 4-week period, with the helicopter needing at least 2 days to move the reno mattresses. Although this plan would provide for stabilization of the site's banks and the estimated cost was only slightly greater than the proposed action, there are serious drawbacks to the plan. The chief drawback is the safety concern of using a helicopter to move about 500 rock filled baskets, each weighing about 7,000 pounds. Because of these concerns, this alternative was not studied in greater detail.

3.) Other Alternatives. During a field visit on 13 February 1996, representatives of the CCT, the Corps of Engineers, and the Bureau of Reclamation discussed several other approaches, but rejected them as unsuitable, insufficient, impractical or too expensive. Alternatives discussed included: hardwall (concrete or timber retaining wall), wetted cement bag wall, shotcrete, sheetpile wall (steel or plastic), and vegetation measures. The identification by remote sensing and relocation of all identified burials was also considered, but the costs would be greater than those for bank protection and the CCT considers relocation viable only as a last resort to the loss of cemetery sites.

d. Authorization - The Chief Joseph Dam Project was authorized on July 24, 1946 (PL79-525). The Additional Units Project was authorized on June 30, 1948 (PL 80-858). As part of the normal operations and maintenance, the Corps of Engineers has the discretion to clear and remove any brush, debris, and natural obstructions which may be detrimental to the project. The project site is on private lands on which the Corps has an easement. The real estate easement for Wildlife Site 19 gives the Corps of Engineers "the right to enter upon the lands for the purpose of locating, preserving, or removing cultural resource material and information."

4. EXISTING ENVIRONMENT

a. General Buckley Bar is a gravel bar formed by natural processes on the Columbia River. After Chief Joseph Dam was built, Rufus Woods Lake flooded part of the bar to create an island. The bar contains deep, coarse sandy fluvial and aeolian sediments. These sediments overlie Columbia River gravels.

b. Water Quality Water quality in the area is generally good. The Washington State Department of Ecology rates the waters of Rufus Woods Lake as being Class A.

c. Vegetation. Vegetation on Buckley Bar is typical of that found on wetter sites in shrub steppe communities. Cover is dominated by bitterbrush (*Purshia tridentata*), chokecherry (*Prunus virginiana*) and needle and thread (*Stipa comata*), bentgrass (*Agrostis spica-venti*). Western juniper (*Juniperus occidentalis*) and serviceberry (*Amelachier alnifolia*) are also found on the island. In the proposed construction area adjacent to the point is one ponderosa pine (P*inus ponderosa*) which has recently died. This tree represents a potential perch site for bald eagles (*Haliaeetus leucocephalus*).

d. Fish and Wildlife Buckley Bar is designated as Wildlife Mitigation Area No. 19 for the Chief Joseph Dam project. Wildlife species typical of shrub steppe communities inhabit the area. Coyote (*Canis latrans*), mule deer (*Odocoileus hemionus*), racoon (*Procyon lotor*), yellow pine chipmunk (*Eutamias amoenus*), deer mouse (*Peromyscus maniculatus*), and great basin pocket mouse (*Perognathus parvis*) have all been observed on Buckley Bar. The island is also an important area for mule deer fawning which occurs in May and June. Migratory and wintering waterfowl present on the Rufus Woods pool include eared grebe (*Podiceps nigricollis*), horned grebe (*Podiceps auritus*), western grebe (*Aechmophorus occidentalis*), mallard (*Anas platyrhynchos*), American wigeon (*Anas americana*), redhead (*Aythya americana*), northern pintail (*Anas acuta*), canvasback. (*Aythya valisineria*), scaup species (*Aythya sp.*), bufflehead (*Bucephala albeola*), goldeneye species (*Bucephala sp.*), ruddy duck (*Oxyura jamaicensis*), and American coot (*Fulica americana*). Great blue heron (*Ardea herodias*), Canada goose (*Branta canadensis*), and common merganser (*Mergus merganser*) are found here in summer also. Western kingbird (*Tyranus verticalis*), eastern kindbird (*Tyranus tyrannus*), chipping sparrow (*Spizella passerina*), northern oriole (*Icterus galbula*), and western meadowlark (*Sturnella neglecta*) are passerines found in summer. Chukar (*Alectoris chukar*), red-shafted flicker (*Colaptes auratus*), black-billed magpie (*Pica pica*), American robin (*Turdis migratorius*) and townsend solataire (*Myadestes townsendi*) were found in fall. Buckley Bar is located adjacent to a walleye pike (*Stizostedion vitereum)* fishing area. Some walleye spawning has been observed in the vicinity; however, few of the offspring survive due to inappropriate pool conditions for rearing (Bob Fisher, pers. comm, 1996). Konkanee are found in Rufus Woods Lake but do not spawn in the area adjacent to Buckley Bar. Other fish found in the pool include whitefish, rainbow and brown trout, perch, sturgeon, burbot, squawfish, peamouth, chiselmouth, carp, and several species of suckers.

e. Threatened and Endangered Species. Bald eagles (*Haliaeetus leucocephalus*) utilize the area in winter, departing for nesting areas in March. The closest nesting site is approximately 3/4 of a mile downstream of Buckley Bar.

f. Wetlands The project area does not contain wetlands as defined by the Corps of Engineers, but the areas below ordinary high water (elevation 956 feet) are considered “waters of the U.S..”

g Cultural Resources. Buckley Bar contains known cultural resources sites used by Native Americans. Included is a prehistoric cemetery. Bank protection measures are being proposed based on coordination with the CCT and the Washington State Office of Archaeology and Historic Preservation (SHPO).

h. Air Quality/Noise. No known air quality or noise problems exist in the area..

5. ENVIRONMENTAL IMPACTS

a. General Project Impacts Bank protection at Buckley Bar would help protect a sensitive cultural resources site. A minor loss of natural shoreline would occur, as well as the loss of one season of Canada goose nesting at Buckley Bar. Short-term increases in fossil fuels emissions and noise are expected; however, long-term adverse impacts are not anticipated.

b. Water Quality. No significant discharges into Rufus Woods Lake are expected to occur due to the proposed action. There may be minor increases in turbidity caused by rock placement. Material for construction would be obtained from an established borrow pit and rock quarry. No contaminants are known or suspected to be present in the materials. The need for a Short-Term Water Quality Modification was waived by the Washington State Department of Ecology (Ecology) per securing

Hydraulic Project Approval (HPA) conditions from the Washington Dept. of Fish & Wildlife (WDF&W).

c. Vegetation Neither candidate nor sensitive plant species grow within the boundaries of the proposed project area. Construction would minimize to the extent practicable disturbing large bitterbrush and a dead pine tree that comprise the main elements of wildlife habitat at the site. There would be minimal removal of bitterbrush during rock placement in the low bank areas. However, placement of bank protection material would mainly occur on areas already eroded. Placement of material adjacent to the ponderosa pine located at the "point" would be done so as to avoid removing the pine tree. In the future, this tree might become a useable perch for bald eagles and other birds using the reservoir. Significant damage to vegetative areas is not expected .

d. Fish and Wildlife. Work would ideally take place outside goose nesting season, but the need to perform bank protection as soon as possible to save the significant archaeological site overrides normal considerations. The COE, WDF&W, and CCT have decided that the emergency nature of this work necessitates loss of a goose nesting season at the site. The site is near a walleye pike fishing area, and there may be temporary impacts on the fishery. No effects on salmonids are expected. The area is a significant deer fawning area; however, the proposed work would be accomplished before fawning season..

f. Wetlands No wetlands as defined by the Corps of Engineers would be impacted by the proposed project. The proposed project would result in the discharge of approximately 3000 cubic yards of material into waters of the United States. The Corps of Engineers does not issue itself permits under any regulatory authorities it administers but still follows the procedural aspects required of any applicant to secure necessary permits. The proposed project qualifies for inclusion under Nationwide Permit 13, and the Seattle District has coordinated notification to conform with the Nationwide 13 notification process. A public notice (CENPS-EN-PL 96-1) with a project description and maps was faxed on March 7, 1996 to the U.S. Fish and Wildlife Service (FWS), National Marine Fisheries Service (NMFS), Environmental Protection Agency (EPA), Ecology, and the SHPO. All agencies concurred with the proposal. HPA conditions were secured from WDF&W for March 15, 1996. The need for an individual 401 Water Quality Certification was waived by Ecology because the project conformed to conditions proposed by the WDF&W in the HPA. The Section 404(b)(1) evaluation has already been prepared as part of the documentation for issuance of the national Nationwide 13 permit conditions issued on November 19, 1991.

f. Threatened and Endangered Species The FWS expressed concern regarding project interference with bald eagle use in the area. Bald eagles do frequent the Buckley Bar area. However, work would commence after the wintering concentrations of eagles have dispersed. One bald eagle nest is located approximately three quarters of a mile downstream of the construction site. It is not anticipated that construction would disrupt that site. Barge traffic for the construction would be coming from upstream of Buckley Bar and would not impact bald eagle use on the pool.

g. Cultural Resources. The work would take place at a National Register-eligible prehistoric archaeological site and prehistoric Indian cemetery on non-Federal land (but managed as part of the Chief Joseph Dam Project). In accordance with the provisions of the Native American Graves Protection and Repatriation Act of 1990, the National Historic Preservation Act of 1992, and Corps Historic Preservation regulations, the Corps has coordinated this plan with the CCT, the State Historic Preservation Officer (SHPO), and the Advisory Council for Historic Preservation and would maintain contact with the SHPO and the CCT throughout all phases of work. The Corps has obtained concurrence from the CCT and SHPO that the bank protection project would have no adverse effect on the site. Any materials removed from the area before construction would be curated at the CCT archaeological repository.

In accordance with RCW Title 68, a permit from the Washington State Office of Archaeology and Historic Preservation is needed to disturb the site. The Corps has a current permit from the state for relocating burials in 1995, and the Corps is seeking an extension of this permit to provide for emergency relocation of burials if needed during construction; as the construction is designed to avoid earth disturbance, such action is not expected unless recent erosion has deposited human remains on the beach.

h. Noise/Air Quality. During construction, large equipment, including bulldozers, trucks and front-end loaders, would be used to move material from the quarry to the rock barges. A tug would move the barges to the construction site and placement of material would be done using a floating crane. All this equipment would temporarily increase emissions and noise levels. Increased concentrations of fossil fuels and particulates are expected. However, with the good air quality that currently exists, rapid dispersion is expected with no long-term adverse impact.

i. Commitment of Resources.

1. Capital. Funds expended on bank protection cannot be used for other purposes. The total estimated cost of these repairs is $480,000.

2. Labor. Human resources used for bank protection cannot be retrieved and would be lost for other purposes.

3. Borrow Material. Gravel and rock material are generally considered unavailable for other uses.

4. Fossil Fuels. Diesel and gasoline consumed by construction and support equipment would not be available for other purposes; however, lubricating oils may be recycled.

6. COORDINATION.

A public notice (CENPS-EN-PL 96-1) with a project description and maps was faxed on March 7, 1996 to the U.S. Fish and Wildlife Service (FWS), National Marine Fisheries Service (NMFS), Environmental Protection Agency (EPA), Ecology, and the SHPO (appendix 1). All agencies concurred with the proposal. HPA conditions were secured from WDF&W for March 15, 1996 (appendix 1). Ecology issued a waiver of the Short-Term Water Quality Modification and 401 Water Quality Certification on March 8, 1996. As the project is not located in a coastal county, an individual coastal consistency determination is not required under the nationwide permit conditions. The CCT Fish and Wildlife Department, and WDF&W have reviewed preliminary project design and concurred that the project would have minimum impacts on fish and wildlife. The USFWS expressed interest in possible impacts of the project on bald eagles (reference paragraph 4.f.). See Appendix 1 for coordination documentation.

REFERENCES

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Appendix B.

Draft EA Comment and the Corps Response

Comment from the Coulee Ranch LLC the owner of Buckley Bar:

Paragraph 6.9 (Recreation and Other Public Use) of the project description states: "Public recreational use occasionally occurs at or near the proposed project area, though it is not intended for that purpose." This statement appears presumptive both as to public access to this private land holding and who determines the intended uses of this island.

Corps Response:
The Corps regrets that this statement was made and will change the sentence to state: "The project area is located on a private land holding and any recreational use of this land should be coordinated with the land owner."

Appendix C.

Office of Archaeology and Historic Preservation Concurrence

STATE OF WASHINGTON

Office of Archaeology and Historic Preservation

1063 S. Capitol Way, Suite 106 • PO Box 48343 • Olympia, Washington 98504-8343
Phone (360) 586-3065 • Fax Number (360) 586-3067
http://www.oahp.wa.gov

July 13, 2005

Mr. Mark Ziminske
Environmental Resources
Seattle District, Corps of Engineers
PO Box 3755
Seattle, Washington 98124-3755

Re: Buckley Bar Shoreline Protection Project
Log No: 071305-4-COE-S
COE Reference: ***N.A.***

Dear Mr. Ziminske:

Thank you for contacting our office. We have reviewed the material you provided for the proposed Buckley Bar Shoreline Protection Project in Douglas County, Washington.

We understand from the professional report and your review that no cultural resources are identified in the by the Corps of Engineers as the Area of Potential Effect. We concur with your determination of No Historic Properties Effected. We also concur with the recommendations for professional archaeological monitoring of the proposed construction and concur with your stipulated conditions.

We would appreciate receiving the professional archaeological monitoring plan when available. We also would appreciate receiving any further correspondence or comments from concerned tribes or other parties that you receive as you consult under the requirements of 36CFR800.4(a)(4).

These comments are based on the information available at the time of this review and on the behalf of the State Historic Preservation Officer in conformance with Section 106 of the National Historic Preservation Act, as amended, and its implementing regulations 36CFR800. Should additional information become available, our assessment may be revised. Thank you for the opportunity to comment on this undertaking and a copy of these comments should be included in subsequent environmental documents.

Sincerely,

Robert G. Whitlam, Ph.D.
State Archaeologist
(360) 586-3080
email: rob.whitlam@dahp.wa.gov

cc: C. Pleasants

ADMINISTERED BY THE DEPARTMENT OF COMMUNITY, TRADE & ECONOMIC DEVELOPMENT